included in the capital budget, the rupee amount of capital budget, ignoring depreciation, is Rs. 202.5 million.

Calculate weighted average cost of capital of the company after expansion. [10]

Ans: WACC = 10.9862%

21. 2064 Q.No. 9

Modern Nepal Inc. has determined it optimal capital structure consists of 60 percent equity and 40 percent debt. Modern Nepal must raise additional capital to fund its upcoming expansion. The firm has Rs. 2 million in retained earnings that has a cost of 12 percent. Its investment bankers have informed the firm that it can issue and additional Rs. 6 million of new common stock at a cost of 15 percent. Furthermore, the firm can raise up to Rs. 3 million of debt at 10 percent and an additional Rs. 4 million at 12 percent. The firm has estimated that the proposed expansion will required an investment of Rs. 5.9 million. What is the weighted average cost of capital for the funds Modern Nepal will be raising? [Cost of Capital/10]

Ans: WACC - 11.4%

22. 2064 Q.No. 8 [BBS III Year]

The small tool company was recently formed to manufacture a new product. The company has the following capital structure in the beginning of the year 2004.

13% Debenture of 2008	Rs. 6 million
8% Preference stock	Rs. 2 million
Common stock 8,000 shares of Rs. 100	Rs. 8 million
	Rs. 16 million

The common stock sells for Rs. 200 a share on this date. Last year company paid dividend of Rs. 20 per share and expected to grow at the rate of 10 percent. The company has a marginal tax rate of 40 percent.

a. Compute the firm's weighted average cost of capital.

b. Is the figure in (a) is an appropriate acceptance criteria for evaluating new investment proposal? [10]

Ans: (a) 14.225%

23. 2064 C Q.No. 5

The following tabulation gives earnings per share figures for the Shrestha Company during the preceding 5 years. The firm's common stock, 6 million shares outstanding, is now (1/1/2004) selling for Rs. 70 per share, and the expected dividend at the end of the current year 2004 is 60 percent of the 2003 EPS. Because investors expect past trend to continue, it may be based on the earnings growth rate.

Year	2003	2002	2001	2000	1999
EPS	Rs. 7.8	7.22	6.68	6.19	5.73

Current interest rate on new debt is 10 percent. The firm's marginal tax rate is 30 percent. Its capital structure considered to be optimal, is as follows:

Debt	Rs. 104 million
Common equity	Rs. 156 million
Total liabilities and equity	**Rs. 260 million**

Calculate:

a. Company's after tax cost of new debt and of common equity, assuming that new equity comes only from retained earnings.

b. Company's weighted average cost of capital, again assuming that present capital structure is maintained.

Ans: (a) 7%; 14.69% (b) 11.61%

4. 2065 Q.No. 7

The Small Tool company was recently formed to manufacture a new product. The company has the following capital structure in the beginning of the year 2004.

13% Debenture of 2008	Rs. 6 million
8% Preferred stock	Rs. 2 million

Common stock 80,000 shares of Rs. 100	Rs. 8 million
	Rs. 16,000

The common stock sells for Rs. 200 a share on this date. Last year company paid dividend of Rs. 20 per share and expected to grow at the rate of 10 percent. The company has a marginal tax rate of 40 percent. Compute the firm's weighted average cost of capital. 10

Ans: 9.175%

25. 2065 Q.No. 5 [BBS III Old]

Asian Paint Inc. has target capital structure of debt equity ratio of 1:15. Company's before tax cost of debt is 12 percent and its marginal tax rate is 30 percent. The current price of stock is Rs. 225; the last dividend was Rs. 20; and the dividend expected to grow at a constant rate of 10 percent. What will be the firm's cost of equity and its WACC? [10]

Ans: K_e = 19.78%; WACC = 19.069%

26. 2066 Q.No. 7

Following is the information given below: [10]

Weight of debt	=	0.40
Weight of equity	=	0.60
Financing needs	=	Rs. 5.9 million

Equity capital

Retained earnings of Rs. 2 million, cost (k_s) 12%

New common stock of Rs. 6 million, cost (k_s) 15%

Debt capital

Rs. 3 million debt financing at 10%

Rs. 4 million debt financing at 12%

Tax rate is 40%

Find weighted average cost of capital (WACC).

Ans: 10.383%

27. 2066 Q.No. 5 BBS III (Old)

Xtra Strong Company is attempting to evaluate the costs of internal and external common equity. The company's stock is currently selling for Rs. 60 per share. The company expects to pay Rs. 5.25 per share at the end of the year. The dividends for the past 5 years are given below:

Year	2005	2004	2003	2001	2000
Dividend (Rs.)	5	4.5	4	3.5	3

The company expects to net Rs. 51 per share on a new share after floatation costs. Calculate:

a. The growth rate of dividends
b. The floatation cost in percentage
c. The cost of retained earnings
d. The cost of new common stock.

Ans: (a) 13.62% (b) 15% (c) 22.37% (d) 22.91%

9. THE BASIS OF CAPITAL BUDGETING

Theoretical questions

1. 2064 Q.No. 12 b

Briefly explain relative merits and demerits of different methods of evaluating capital budgeting project. [20]

Write notes on

2. 2062 'F' Q. No. 10 (b) / 2064 C Q.No. 10(b)

Crossover rate

3. 2063 Q.No. 10 a

Net present value [5]

umerical Problems

2056 'C'

Project L has a cost of Rs.52,125, and its expected net cash inflows are Rs.12,000 per year for 8 years.

a. What is the project's payback period?
b. The cost of capital is 12 percent. What is the project's net present value?
c. What is the project's internal rate of return?
d. What is the project's discounted payback period, assuming a 12 percent cost of capital?

Ans: (a) 4.34 years (b) Rs. 7,486.20 (c) 16% (d) 6.51 years

2056 'F'

Bagmati Engineering is considering the purchase of two pieces of equipment, X and Y, in this year's capital budget. The projects are not mutually exclusive. The cash outlay for the truck is Rs.17,100, and that for the Y is Rs.22,430. The firm's cost of capital is 14 percent. After tax cash flows, including depreciation, are as follows:

Year	1	2	3	4	5
X	Rs. 5,100	5,100	5,100	5,100	5,100
Y	Rs. 7,500	7,500	7,500	7,500	7,500

Calculate the internal rate of return and net present value for each project, and indicate the correct accept/reject decision for each.

Ans: IRR_{Truck} = 15% IRR_{Pulley} = 20%; NPV_{truck} = Rs. 409 NPV_{Pulley} = Rs. 3,318; As +ve NPV and IRR is greater than cost of capital both system should be accepted

2057 'C'

You are a financial analyst for Everest Electronics Company. The Director of capital budgeting has asked you to analyze two proposed capital investments, Projects S and L Each project has cost of Rs.10,000, and the cost of capital for each project is 12 percent. The projects' expected net cash flows are as follows:

Expected Net Cash Flow

Year	Project–S	Project–L
0	(Rs.10,000)	(Rs.10,000)
1	6,500	3,500
2	3,000	3,500
3	3,000	3,500
4	1,000	3,500

Calculate each project's payback period, net present value, and internal rate of return. Which project or projects should be accepted if they are independent? Which project should be accepted if they are mutually exclusive?

Ans: PBP_A = 2.17 years, PBP_B = 2.86 yrs; NPV_A = Rs. 967.5, NPV_B = Rs. 629.5; IRR_A = 18.017%, IRR_B = 14.96% Both Project; Project A.

2057 'F'

Lumbini Bread Industries must choose between a gas-powered and an electric-powered oven for making bread in its company. Since both ovens perform the same function, the firm will choose only one. (They are mutually exclusive investments.) The electric-powered truck will cost more, but it will be less expensive to operate; it will cost Rs.22,000, whereas the gas-powered oven will cost Rs.17,500. The cost of capital that applies to both investments is 12 percent. The life for both types of oven is estimated to be 6 years, during which time the net cash flows for the electric-powered oven will be Rs.6,290 per year and those for the gas-powered oven will be Rs.5,000 per year. Annual net cash flows include depreciation expenses. Calculate the net present value and internal rate of return for each type of oven, and decide which to recommend.

Ans: NPV_{Gas} = Rs. 3,057 $NPV_{Electric}$ = Rs. 3,861; IRR_{Gas} = 18%, $IRR_{Electric}$ = 18%; Electric powered forklift truck must be chosen as the NPV is higher than Gas powered forklift truck.

8. 2058 'C'

BS Company is considering a new product line to supplement its range line. It is anticipated that the new product line will involve cash investment of Rs.700,000 at time 0 and Rs.1.0 million in year 1. After-tax cash inflows of Rs.250,000 are expected in year 2, Rs.300,000 in year 3, Rs.350,000 in year 4, and Rs.400,000 each year thereafter through year 10. While the product line might be viable after year 10, the company prefers to be conservative and end all calculations at that time.

a. If the required rate of return is 15 percent, what is the net present value of the project? Is it acceptable?
b. What is its internal rate of return?
c. What would be the case if the required rate of return was 10 percent?
d. What is the project's payback period?

Ans: (a) NPV = (Rs. 117,800) unaccepted; (b) IRR = 13.21% (c) Project would be accepted because IRR > Cost of Capital (i.e. 13.21 > 10%) (d) 6 yrs.

9. 2058 'F'

You are a financial analyst for Everest Electronics Company. The Director of capital budgeting has asked you to analyze two proposed capital investments, Projects S and L Each project has a cost of Rs.10,000, and the cost of capital for each project is 12 percent. The projects' expected net cash flows are as follows:

Expected Net Cash Flow

Year	Project–S	Project–L
0	(Rs.10,000)	(Rs.10,000)
1	6,500	3,500
2	3,000	3,500
3	3,000	3,500
4	1,000	3,500

Calculate each project's payback period. Which project should be selected?

Ans: PBP_S = 2.17 yrs. PBP_L = 2.86 yrs; Project S NPV_S = Rs. 967.5, NPV_L = Rs. 629.5

10. 2059 'C'

Nepal Stove Company is considering a new product line to supplement its range line. It is anticipated that the new product line will involve cash investment of Rs.700,000 at time 0 and Rs.1.0 million in year 1. After-tax cash inflows of Rs.250,000 are expected in year 2, Rs.300,000 in year 3, Rs.350,000 in year 4, and Rs.400,000 each year thereafter through year 10. While the product line might be viable after year 10, the company prefers to be conservative and end all calculations at that time.

a. If the required rate of return is 15 percent, what is the net present value of the project? Is it acceptable?
b. What is its internal rate of return?
c. What would be the case if the required rate of return was 10 percent?
d. What is the project's payback period?

Ans: (a) NPV = (Rs. 117,800) unaccepted; (b) IRR = 13.21% (c) Project would be accepted because IRR > Cost of Capital (i.e. 13.21 > 10%) (d) 6 yrs.

11. 2059 'F'

Narayani Paper Mills, has two investment proposals, which have the following characteristics:

	Project A			Project B		
Period	Cost	Profit after taxes	Net cash flow	Cost	Profit after taxes	Net cash flow
0	Rs.9,000	–	–	Rs.12,000	–	–
1		Rs.1,000	Rs.5,000		Rs.1,000	Rs.5,000
2		1,000	4,000		1,000	5,000
3		1,000	3,000		4,000	8,000

For each project, compute its payback period, and its net present value using a discount rate of 15 percent. Analyze and interpret the results by offering criticisms, if any.

Ans: PBP_A = 2 yrs. PBP_B = 2.25 yrs. NPV_A = Rs. 344.9 NPV_B = 1,388.5

12. 2060 'C'

Bheri Chemical Company is considering the replacement of two old machines with a new, more efficient machine. It has determined that the relevant after-tax incremental operating cash flows of this replacement proposal are as follows:

End of year	0	1	2	3
Cash flows	–Rs.404,424	Rs.86,890	Rs.106,474	Rs.91,612

End of year	4	5	6	7	8
Cash flows	Rs.84,801	Rs.84,801	Rs.75,400	Rs.66,000	Rs.92,400

Calculate net present values. Should the replacement be made? Assume cost of capital is 14%. *(Note cost of capital is not given in the question paper)*

Ans: NPV = Rs. 2,924 As the NVP is +ve, the replacement should be made.

13. 2060 'C'

The Makwanpur Acme Rivet Company is evaluating three investment situations: (1) produce a new line of aluminum rivets, (2) expand its existing rivet line to include several new sizes, and (3) develop a new, higher quality line of rivet. If only the project in question is undertaken, the expected present values and the amounts of investment required are as follows:

Project	Investment required	Present value of future cash flows
1	Rs.200,000	Rs.290,000
2	115,000	185,000
3	270,000	400,000

If projects 1 and 2 are jointly undertaken, there will be no economies; the investment required and present values will simply be the sum of the parts. With projects 1 and 3, economies are possible in investment because one of the machines acquired can be used in both production processes. The total investment required for projects 1 and 3, combined is Rs.440,000. If projects 2 and 3 are undertaken, there are economies to be achieved in marketing and producing the products but not in investment. The expected present value of future cash flows for projects 2 and 3 combined is Rs.620,000. If all three projects are undertaken simultaneously, the economies noted above will still hold. However, a Rs.125,000 extension on the plant will be necessary, as space is not available for all three projects. Which project or projects should be chosen?

Ans: Since the NPV of combination 1 and 3 is highest (Rs. 290,000 + Rs. 400,000 = 690,000), it should be chosen

14. 2060 'F'

Two mutually exclusive projects have projected cash flows as follows:

Period	0	1	2	3	4
Project A	– Rs.2,000	Rs.1,000	Rs.1,000	Rs.1,000	Rs.1,000
Project B	– 2,000	0	0	0	Rs. 6,000

a. Determine the internal rate of return for each project.

b. Determine the net present value for each project at discount rates of 0, 5, 10, 20, 30, and 35 percent.

c. Plot a graph of the net present value of each project at the different discount rates.

d. Which project would you select? Why?

Ans: (a) IRR_A = 34.91% IRR_B = 31.61%; (b) NPV_A: Rs. 2,000; Rs. 1,.546; Rs. 1,170; Rs. 589; Rs. 166; (Rs 3), NPV_B: Rs. 4,000; Rs. 2,936; Rs. 2,098; Rs. 894; Rs. 101; (Rs.193) (d) Project B

15. 2061 'C'

Consider the following two mutually exclusive projects:

Year	Cash Flow (A)	Cash Flow (B)
0	– Rs. 180,000	– Rs. 18,000
1	10,000	10,000
2	25,000	5,000
3	25,000	3,000
4	380,000	2,000

You require a 15 percent return on your investment.

(a) If you apply the payback criterion, which investment will you choose? Why?

(b) If you apply the discounted payback criterion, which investment will you choose? Why?
(c) If you apply NPV criterion, which investment will you choose? Why?
(d) If you apply the IRR criterion, which investment will you choose? Why?
(e) Which project will you finally choose if there are conflicts between NPV and IRR criterions? Why?

Ans: (a) PBP_A = 3.3158 yrs. PBP_B = 3 yrs. Since Project B has low PBP it should be chosen, (b) Project A should be chosen as it has discounted PBP of 3.6257 yrs. (c) Project A as it has +ve NPV (d) Project A as has higher IRR (27.3232%) that cost of capital

16. 2061 'F'

Generation X, Inc., has identified the following two mutually exclusive projects:

Year	Cash Flow (A)	Cash Flow (B)
0	– Rs. 2,600	– Rs. 11,000
1	4,000	1,000
2	5,000	6,000
3	6,000	5,000
4	1,000	5,000

(a) What is the internal rate of return for each of these projects? If you apply the IRR decision rule, which project should the company accept? Is this decision necessarily correct?
(b) If the required return is 11 percent, what is the NPV for each of these projects? Which project will you choose if you apply the NPV decision rule?
(c) If there were a conflict between IRR and NPV criterion rules, how would choose the project?
(d) Why the projects become mutually exclusive?

Ans: (a) IRR_A = 162.6558% IRR_B = 17.1130% Project A; (b) NPV_A = Rs. 10,107.5, NPV_B = (Rs. 1,720), Project A

17. 2062 'C' Q. No. 12

Bajhang Natural Resources Development Company is considering two mutually exclusive investments. The projects' expected net cash flows are follows.

Year	Project M	Project N
0	(Rs. 300)	(Rs. 405)
1	(387)	134
2	(139)	134
3	(100)	134
4	666	134
5	600	134
6	600	134
7	850	134
8	(180)	0

Assume cost of capital is 14 percent.

a. What is each project's IRR? Explain which project would you choose.
b. Determine the crossover rate and describe its significance.

Ans: (a) IRR_M = 24.93% and IRR_N = 26.82% Project N (b) 14%

18. 2062 'F' Q. No. 12

Bajura Trekkers Limited is considering two projects, first project requiring installing machine of larger capacity that expects to generate cash flows for eight years and second requiring lesser capacity that expects to generate cash flows for only years. The relevant cash flows of both projects are as under:

Year	First project's cash flows	Second project's cash flows
0	Rs. (150,000)	Rs. (80,000)
1	10,000	15,000
2	12,000	15,000
3	12,000	15,000
4	20,000	15,000
5	20,000	15,000

6	25,000	15,000
7	51,000	15,000
8	600,000	15,000

Whichever project the company would choose, if any, it required a 15% return on its investment.

a. If you apply the payback criterion, which project will you choose? Why?
b. If you apply internal rate of return criterion, which project will you choose? Why?
c. Which project will you finally choose if objective is to maximize your wealth? Why?
d. What do you understand by above calculations?

Ans: (a) PBP_I = 7 yrs PBP_{II} = 5.33 yrs (b) IRR_I = 25.283% IRR_{II} = 10.008% (c) NPV_I = Rs. 123,157.6 NPV_{II} = (Rs.12,690.50)

19. 2062 Q.No.12

You are a financial analyst for Damon Electric Company. The director of capital budgeting has asked you to analyze two proposed capital investments. Project X and Y. Each project has a cost of Rs. 10,000 and the required rate of return for each project is 12 percent. The projects expected net cash flows are as follows:

Year	Project X	Project Y
0	Rs. (10,000)	Rs. (10,000)
1	6,500	3,500
2	3,000	3,500
3	3,000	3,500
4	1,000	3,500

a. Calculate each project's payback period, net present value (NPV) and interest rate of return (IRR).
b. Which project or projects should be accepted if they are independent?
c. Which project should be accepted if they are mutually exclusive?

Ans: (a) Payback period for X = 2.17 years and for Y = 2.86 years, NPV_X = Rs. 966.01, NPV_Y = Rs. 630.72, IRR_X = 18.06%, IRR_Y = 15% (b) Both project (c) Project X

20. 2063 Q.No. 12

The after tax cash flows for two mutually exclusive projects have been estimated, and the following information has been provided:

Year	Machine A	Machine B
0	Rs. (250,000)	Rs. (250,000)
1	200,000	0
2	90,000	180,000
3	10,000	100,000
4	10,000	90,000
5	5,000	20,000

The company's required rate of return is 14 percent.

a. Calculate IRR of the both projects.
b. Calculate NPV of the both projects.
c. Which project is better? [20]

Ans: (a) IRR_A = 17.18%; IRR_B = 17.18% (b) NPV_A = 9,963; NPV_B = 19,687 (c) Project B (Higher NPV)

21. 2063 Q.No. 12 BBS III

A newly established Refrigeration Co. is considering two mutually exclusive investment. The firm had already spent Rs. 100 lakhs in feasibility study of each project. The following project expected net cash flows are extracted from the feasibility report.

Expected Net Cash Flows (Rs. in lakhs)

Year	Project A	Project B
0	(300)	(405)
1	(387)	134

2	(193)	134
3	(100)	134
4	600	134
5	600	134
6	850	134
7	(100)	0

a. Calculate each project's payback.
b. Calculate each project's IRR
c. If you were told that each project's required rate of return was 12 percent, what would t proper choice be?
d. Calculate cross over rate and interpret. [2

Ans: (a) 4.967 years; 3.767 (b) 15.68% (c) NPV_A = Rs. 136.5281; NPV_B = Rs. 45.9276; Project A (d) 15.6

22. 2063 Q.No. 12 BBS III Old

You are a financial analyst for Dacwo Electric Company. The director of capital budgeting h asked you to analyse two proposal capital investments: Projects X and Y. Each project has cost of Rs. 10,000,000, and the required rate of return fore each project is 12 percent. You a also told that mortgage loan will be taken from Nepal Credit and Commercial Bank to the ext of 80 percent if project cost at an annual interest rate of 8 percent. Both of projects will depreciated in 4 years on straight-line basis. The corporate tax rate applicable is 40 perce The projects expected before depreciation and tax cash flows are as follows:

Year	Project X	Project Y
0	(10,000,000)	(10,000,000)
1	13,333,333	8,333,333
2	7,500,000	8,333,333
3	7,500,000	8,333,333
4	2,501,667	8,333,333

a. Calculate each project's product payback, NPV and IRR
b. Which projects should be accepted if they are independent?
c. Which project should be accepted if they are mutually exclusive?
d. Why does the conflict exist between projects?

Ans: (a) PBP: X = 1.18 year, Y = 1.67 year; NPV: X = Rs. 7,924,985; Y = Rs. 8,223,
IRR: X = 55.055%; Y = 47.23% (b) Both X and Y (c) Proje

23. 2064 Q.No. 12 a

Project S costs Rs. 15,000 and it is expected to produce benefits (cash flows) of Rs. 4,500 year for 5 years and project R costs Rs. 37,000 and is expected to produce cash flows of 11,000 per year for 5 years. Calculate the NPV, IRR, and payback period for each proj assuming a required rate of return of 14 percent. If the projects are independent, w project(s should be selected? If they are mutually exclusive projects, which project actu should be selected?

Ans: (a) NPV_S = 448.95; NPV_R = 764.1; PBP_S = 3.33 years; PBP_R = 3.36 y

24. 2064 Q.No. 12 [BBS III Year]

Sakha Group has hired you as an financial analyst for analysing two proposed ca investment. Project X and Y. Each project has a cost of Rs. 5,000,000 and the required ra return for each project is 10 percent. You are also told that mortgage loan will be taken Everest Bank to the extent of 60 percent of project cost at an annual interest rate of 6 perc Both the projects will be depreciated in 4 years on straight-line basis. The corporate tax applicable is 40 percent the project's expected before The depreciation and tax cash flows as follows:

Expected before tax cash flows in Rs.

Year	Project X	Project Y
0	(5,000,000)	(5,000,000)

1	6,666,667	4,166,667
2	3,750,000	4,166,667
3	3,750,000	4,166,667
4	1,250,834	4,166,667

a. Calculate each project's payback, NPV and IRR
b. Which project of projects should be accepted if they are independent?
c. Which project should be accepted if they are mutually exclusive?
d. Why does the conflict exist between two projects? [20]

Ans: PBP_X = 1.18 years; PBP_Y = 1.67 years; NPV_A = 4,283,716.5; NPV_Y = 4,509,700; IRR_X = 55.055%; IRR_Y = 47.23%

25. 2064 C Q.No. 12

Zumboo Electronics Inc. is considering two mutually exclusive investments. The firm had already spent Rs. 200 lakhs in feasibility study of each project. The following project expected net cash flows are extracted from the feasibility report:

Expected Net Cash Flows (Rs. in lakhs)

Year	Project A	Project B
0	(300)	(405)
1	(387)	134
2	(193)	134
3	(100)	134
4	600	134
5	600	134
6	850	134
7	(100)	0

a. Calculate each project's payback.
b. Calculate each project's IRR.
c. If you were told that each project's required rate of return was 12 percent, what would the proper choice be?
d. Calculate cross over rate and interpret.

Ans: (a) 4.967 years; 3.767 (b) 15.68% (c) NPV_A = Rs. 136.5281; NPV_B = Rs. 45.9276; Project A (d) 15.69%

26. 2065 Q.No. 12

House Appliance Electronics Inc. is considering two mutually exclusive investments. The following project expected net cash flows are extracted from the feasibility report:

Expected Net Cash Flows (Rs. In Lakhs)		
Year	Project A	Project B
0	(300)	(405)
1	(387)	144
2	(193)	144
3	(100)	144
4	500	144
5	500	144
6	850	144
7	100	0

i. Calculate each projects payback.
ii. Calculate each projects IRR.
iii. If you were told that each project's required rate of return was 12 percent, what would the proper choice be? 20

Ans: (i) 4.96 years; 2.8125 years (ii) IRR_A = 17.8415%; IRR_B=27.1380%
(iii) NPV_A = Rs. 206.6981; NPV_B= Rs. 187.0416

27. 2065 Q.No. 12 [BBS III Old]

You have been asked by the president of National Construction Company, head office in Kathmandu, to evaluate the proposed acquisition of a new earthmover by financing 50 percent of the basic price of Rs. 500,000 by mortgage loan from Nepal Bangladesh Bank at an annual interest rate of 8 percent. Further mover will cost another Rs. 100,000 to modify it for special use by National Construction. Assume the mover falls into the MACRS 3-year class. It will be sold after 3 years for Rs. 200,000, and it will require an increase in net working capital (spare parts inventory) of Rs. 20,000. The earthmover purchased will have no effect on revenues, but it is expected to save National Construction Rs. 200,000 per year in before-tax operating costs, mainly labour. Assume marginal tax rate if 40 percent.

(a) What is the company's net initial investment outlay if it acquires the earthmover?

(b) If the project's required rate of return is 10 percent, should earthmover be purchased?

Ans: (a) Rs. 620,000 (b) NPV = (Rs. 15,481.44); should not purchased

28. 2066 Q.No. 12

After-tax cash flows for two mutually exclusive projects X and Y are given below: (Rs. in '000.)

Year	Project	
	X	Y
0	(Rs. 250,000)	(Rs. 250,000)
1	200,000	0
2	90,000	180,000
3	10,000	100,000
4	10,000	90,000
5	5,000	20,000

The required rate of return is 14 percent.

a. Find net present value for both projects.

b. Find internal rate of return for both projects.

c. Which project is acceptable?

d. Which method is appropriate for ranking of proposal and why? [20]

Ans: (a) Rs.9,963 and Rs.19,687 (b) 17.18% (c) Project B (d) NPV method

29. 2066 Q.No. 12 BBS III (Old)

Consider the following two mutually exclusive projects:

Year	Cash flow X	Cash flow Y
0	(Rs.180,000)	(Rs. 18,000)
1	10,000	10,000
2	25,000	5,000
3	25,000	3,000
4	380,000	2,000

You require a 15 percent return on your investment.

a. If you apply the payback criterion, which investment will you choose? Why?

b. If you apply NPV criterion, which investment will you chose? Why?

c. If you apply IRR criterion, which investment will you choose? Why?

d. Which project will you finally if there are conflicts between NPV and IRR criterion? Why?

Ans: (a) 3.316 years; 3 years Project Y (b) Rs. 81,320; Rs. (2407.4); Project X (c) 27.32%; 5.96%; Project X

10. WORKING CAPITAL MANAGEMENT

Theoretical Questions

1. 2056 'C'

What do you understand by working capital cash flow cycle? How do you measure it? How can it be shortened?

2. 2056 'F'

What is meant by working capital? Explain the various working capital investment and financing policies.

3. 2057 'F'

Why is working capital managements important for the financial health of the firm? Explain the advantages and disadvantages of short-term debt.

4. 2058 'C'

What do you understand by working capital financing policy? Explain the various current financing policies.

5. 2058 'F'

What do you understand by working capital cash flow cycle? Explain clearly inventory conversion period, receivables conversion period and payables deferred period? How can the cash conversion cycle be shortened?

6. 2059 'C'

What do you understand by working capital cash flow cycle? Explain inventory conversion period, receivables conversion period and payables deferred period? How can the cash conversion cycle be shortened?

7. 2059 'F'

What is meant by working capital cash flow c cycle? Describe the methods of measuring it. How can it be shortened?

8. 2062 'C' Q. No. 12

What is working capital? Do you think that public limited companies are not proving successful due to lack of effective working capital policies?

9. 2062 Q.No.11

Why is working capital management important for the financial health of the firm? Explain inventory conversion period, receivables conversion period and payables deferral period.

10. 2063 Q.No. 2 BBS III Old

What it the cash conversion cycle model? How can it be used to improve current assets management?

11. 2063 Q.No. 11 BBS III Old

From the standpoint of borrowers, is long-term of short-term credit riskier? Explain. Would it ever make sense to borrow on a short-term basis if yield curve is abnormal? [20]

12. 2063 Q.No. 8 a

What are the various types of working capital you may find in a manufacturing company? [5]

13. 2064 Q.No. 11 a

Why is working capital management important for the financial health of the firm? [10]

14. 2064 Q.No. 11 [BBS III Year]

Why working capital management is so important and critical in Nepalese corporate firms? Are Nepalese corporate managers following appropriate policy regarding working capital financing? [20]

15. 2064 C Q.No. 11

Why management of working capital is important and critical in corporate firm? Also explain the different types of current assets policies.

16. 2065 Q.No. 11

What is working capital? What factors a firm may consider in financing working capital needed? 20

17. 2065 Q.No. 2 [BBS III Old]

What are the advantages and disadvantages of matching the maturities of assets and liabilities? [10]

18. 2066 Q.No. 8a

What do you understand by cash conversion cycle? [5]

19. 2066 Q.No. 2 BBS III (Old)

What is the cash conversion cycle model? How can it be used to improve current assets management? [10][

Write Short Notes on

20. 2060 'C'

Cash conversion cycle

21. 2066 Q.No. 10 b

Factors affecting working capital [5]

22. 2066 Q.No. 10c BBS III (Old)

Working capital investment policy [10]

Numerical Problems

23. 2056 'C'

Sudershan Press Inc. and the Himal Publishing Company had the following balance sheets as of December 31, 1998 (thousand of rupees):

Assets and liabilities	Sudershan Press	Himal Publishing
Current assets	Rs. 100,000	Rs. 80,000
Fixed assets	100,000	120,000
Total assets	**Rs. 200,000**	**Rs. 200,000**
Current liabilities	Rs. 20,000	Rs. 80,000
Long term debt	80,000	20,000
Retained earnings	50,000	50,000
Common stock	50,000	50,000
Total liabilities	**Rs.200,000**	**Rs.200,000**

Earnings before interest and taxes for both firms are Rs. 30 million, and the effective tax rate is 40 percent.

a. What is the return on equity for each firm if the interest rate on current liabilities is 10 percent and the rate on long-term debt is 13 percent?

b. Assume that the short-term rate rises to 20 percent. While the rate on new long-term debt rises to 16 percent, the rate on existing long-term debt remains unchanged. What would be the return on equity for both companies under these conditions?

c. Which company is in a riskier position? Why?

Ans: (a) ROE_S= 10.56%, ROE_H = 11.64%, Himal (b) ROE_S = 9.36%, ROE_H = 6.84% (c) Himal Pu8blishing

24. 2056 'F'

Nepal Sugar Corporation has an inventory conversion period of 75 days, a receivables conversion period of 38 days, and a payables deferral period of 30 days.

a. What is the length of the firm's cash conversion cycle?

b. If the corporation's annual sales are Rs.3,375,000 and all sales are on credit, what is the firm's investment in accounts receivable?

c. How many times per year does the company turn over its inventory?

Ans: (a) 83 days (b) Rs. 356,250 (c) 4.8 times

25. 2057 'C'

The National Corporation turned over its inventory 4 times during the year, and its DSO was 30 days. The corporation's payables deferred period is 40 days. Calculate the cash conversion cycle. If the inventory turnover can be raised to 6 times, what would be the cash conversion cycle?

Ans: 80 days & 50 days

26. 2057 'F'

Kathmandu Batteries Company is a leading Nepalese producer of automobile batteries. The company turns out 1,500 batteries a day at a cost of Rs.6 per battery for materials and labor. It takes the firm 22 days to convert raw materials into a battery. The company allows its customers 40 days in which to pay for the batteries, and the firm generally pays its suppliers in 30 days.

a. What is the length of company 's cash conversion cycle?

b. At a steady state in which company produces 1,500 batteries a day, what amount of working capital must it finance?

c. By what amount could company reduce its working capital financing needs if it was able to stretch its payables deferral period to 35 days?

Ans: (a) 32 days (b) Rs. 288,000 (c) Rs. 45,000

27. 2058 'F'

The Bagmati Corporation trying to determine the effect of its inventory turnover ratio and days sales outstanding (DSO) on its cash flow cycle. The corporation's 1999 sales (all on credit) were Rs. 150,000, and it earned a net profit of 6 percent, or Rs. 9,000. It turned over its inventory 6 times during the year, and its DSO was 36 days. The firm had fixed assets totaling Rs. 40,000. The corporation's payables deferred period is 40 days. Calculate the cash conversion cycle. If the inventory turnover can be raised to 8 times, what would be the cash conversion cycle?

Ans: 56 days & 41 days

28. 2059 'C'

The Nepalgunj Soap Factory is attempting to establish a current assets policy. Fixed assets are Rs.600,000, and the firm plans to maintain a 50 percent debt-to-assets ratio. The interest rate is 10 percent on all debt. Three alternative current asset policies are under considerations: 40, 50 and 60 percent of projected sales. The company expects to earn 15 percent before interest and taxes on sales of Rs.3 million. The company's effective tax rate is 40 percent. What is the expected return on equity under each alternative?

Ans: ROE: 24%, 19.7%, 16.5%

29. 2059 'F'

Palpa Cap Industries and the Banke Cap Industries had the following balance sheets as of December 31, 2001 (thousand of rupees):

Assets and liabilities	Palpa Cap Industries	Banke Cap Industries
Current assets	Rs. 100,000	Rs. 80,000
Fixed assets	100,000	120,000
Total assets	Rs. 200,000	Rs. 200,000
Current liabilities	Rs. 20,000	Rs. 80,000
Long term debt	80,000	20,000
Retained earnings	50,000	50,000
Common stock	50,000	50,000
Total liabilities	**Rs.200,000**	**Rs.200,000**

Earnings before interest and taxes for both firms are Rs. 30 million, and the effective tax rate is 40 percent.

Required:

a. What is the return on equity for each firm if the interest rate on current liabilities is 10 percent and the rate on long-term debt is 13 percent?
b. Assume that the short-term rate rises to 20 percent. While the rate on new long-term debt rises to 16 percent, the rate on existing long-term debt remains unchanged? What would be the return on equity for the both companies under these conditions?
c. Which company is in a riskier position? Why?

Ans: (a) ROE_{Palpa}= 10.56%, ROE_{Banke} = 11.64%, Banke
(b) ROE_{Palpa} = 9.36%, ROE_{H} = 6.84%, Palpa (c) Banke

30. 2060 'C'

Lahan Poultry Industries is attempting to determine the optimal level of current assets for the coming year. Management expects sales to increase to approximately Rs.2 million as a result of an asset expansion presently being undertaken. Fixed assets total Rs.1 million, and the firm wishes to maintain a 60 percent debt ratio. The company's interest cost is currently 8 percent on both short-term and longer-term debt (which the firm uses in its permanent structure). Three alternatives regarding the projected current asset level are available to the firm: (1) an aggressive policy requiring current assets of only 45 percent of projected sales, (2) a moderate policy of 50 percent of sales in current assets, and (3) a conservative policy requiring current assets of 60 percent of sales. The firm expects to generate earnings before interest and taxes

(EBIT) at a rate of 12 percent on total sales. What is the expected return on equity under each current asset level? (Assume a 40 percent tax rate.)

Ans: 9.16%, 10.8% 11.75%

31. 2061 'C'

The Mahakali Match Corporation is trying to determine the effect of its inventory turnover ratio and days sales outstanding (DSO) on its cash flow cycle. The company's 2002 sales (all on credit) were Rs.150,000, and it earned a net profit of 5 percent. It turned over its inventory 9 times during the year, and its days sales outstanding was 36 days. The firm had fixed assets totaling Rs.40,000. The company's payables deferral period is 40 days. Assume 360 days per year.

a. Calculate the company's cash conversion cycle.

b. Assuming the company holds negligible amounts of cash and marketable securities calculate its total assets turnover and return on assets.

c. Suppose the company's managers believe that the inventory turnover decreased to 8 times. What would company's cash conversion cycle, total assets turnover, and return on assets have been if the inventory turnover had been 8 for 2002?

Ans: (a) 36 days (b) 2.12 times, 11.67% (c) 41 days 2.06 times, 10.30%

32. 2061 'F'

The Biratnagar Biscuit Factory has an inventory turnover is 2.4 times, a receivables collection period of 76 days, and a payables deferral period of 60 days. Assume 360 days per year.

a. What is the length of the firm's cash conversion cycle?

b. If the company's annual sales are Rs. 6.75 million and 80% sales are on credit, what is the firm's investment in accounts receivable?

c. How many times per year does the company turn over its inventory?

Ans: (a) 166 days (b) Rs. 11,40,000 (c) 2.4 times

33. 2062 'C' Q. No.8

The Flamingos Corporation is trying to determine the effect of its inventory turnover ratio and DSO on its cash flow cycle. Flamingo's 2002 sales (all on credit) were Rs. 180,000 and it earned a net profit of 5 percent. The cost of goods sold equals 85 percent of sales. Inventory was turned over 8 times during the year, and DSO was 36 days. The firm had fixed assets totaling Rs. 40,000. Flamingo's payable deferral period is 30 days.

a. Determine cash conversion cycle and its effects.

b. Calculate total assets turnover ratio.

c. Calculate ROA assuming holding of cash and marketable securities in negligible.

Ans: (a) 51 days (b) 2.33 times (c) 11.67%

34. 2062 'F' Q. No. 8

Nepal Sugar Corporation has an inventory conversion period of 75 days; a receivable turnover is 9 times, and payable deferral period of 30 days.

a. What is the length of cash conversion cycle?

b. If Corporation's annual sales are Rs. 3,300,000 and 90% of sales are on credit, what is the corporation's investment in accounts receivable?

c. How many times per year does the corporation turnover its inventory?

Ans: (a) 85 days (b) Rs. 330,000 (c) 4.8.times

35. 2063 Q.No. 8 b

Red Horse Battery Corporation is a leading producer of all kinds of batteries. Corporation turns out 1600 automobile batteries a day at a cost of Rs. 3,500 per battery for materials and labour. It takes the corporation 24 days to convert raw materials into a battery. Corporation allows its customers 40 days in which to pay for the batteries; and the corporation generally pays its suppliers in 30 days. Assume 360 days a year.

i. What is the corporation's cash conversion cycle?

ii. If Corporation always produces and sell 1600 batteries a day, what amount of working capital must if finance?

iii. If the corporation could sell all the produced batteries at a price of Rs. 4,000 per battery, what is the working capital turnover? [5]

Ans: (i) 34 days (ii) Rs. 190,400,000 (iii) 12.1008 times

36. 2064 Q.No. 8

New Nepal Corporation is a leading producer of automobile batteries, New Nepal turns out 1,500 batteries a day at a cost of Rs. 6 per battery for materials and labour. It takes the firm 22 days to convert raw material into a battery. New Nepal allows its customers 40 days in which to pay for the batteries, and the firm generally pays its suppliers in30 days.

a. What is the length of New Nepal cash conversion cycle?
b. If New Nepal always produces and sells 1,500 batteries a day, what amount of working capital must it finance?
c. By what amount could New Nepal reduce its working capital financing needs if it was able to stretch its payables deferral period to 35 days? [10]

Ans: (a) 32 days (b) Rs. 288,000 (c) Rs. 45,000

37. 2065 Q.No. 8 b

The Import Corporation is trying to determine the effect of its inventory turnover ratio and days sales outstanding (DSO) on its cash flow cycle. The corporation's 2004 sales (all on credit) were Rs.180,000, and it earned a net profit of 6 percent. The cost of goods sold equals 85 percent of sales. Inventory was turned over 8 times during the year, and DSO was 36 days. The corporation had fixed assets totaling Rs. 40,000. Corporation's payable deferral period is 30 days.

a. Determine cash conversion cycle.
b. Calculate total assets turnover ratio.
c. Calculate return on assets (ROA) assuming holding of cash and marketable securities in negligible. 5

Ans: (a) 51 days (b) 2.33 times (c) 14.003%

38. 2065 Q.No. 7 [BBS III Old]

Red Horse Battery Corporation is a leading producer of all kinds of batteries. Corporation turns out 1500 automobile batteries a day at a cost of Rs. 3,000 per battery for materials and labour. It takes the corporation 22 days to convert raw materials into a battery. Corporation allows its customers 40 days in which to pay for the batteries, and the corporation generally pays its suppliers in 30 days.

a. What is the corporation's cash conversion cycle?
b. If corporation always produces and sell 1500 batteries a day, what amount of working capital must it finance?
c. By what amount could corporation reduces its working capital financing needs if it was able to stretch its payable deferral period to 40 days?
d. If the corporation could sell all the batteries at a price of Rs. 3500 per battery, what is the working capital turnover before and after stretching the payable? What can you conclude? [10]

Ans: (a) 32 days (b) Rs. 144,000,000 (c) CCC = 22 days, Rs. 45,000,000
(d) Before = 13.125; After = 19.09

39. 2066 Q.No. 8b

ABC Company has an inventory turnover of 2.4 times, receivables collection period of 75 days and payable deferred period of 60 days. Assume 360 days.

(i) What is the length of cash conversion cycle?
(ii) If the company's annual sales is Rs. 6.75 million and 80% of sales are on credit, what is the firm's investment in receivables?
(iii) What is the level of inventory of ABC Company? [5]

Ans: (i) 165 days (ii) Rs. 1,125,000 (iii) Rs. 2,812,500

11. CASH MANAGEMENT

Theoretical Questions

1. 2058 'F'

Explain the advantages of holding adequate cash in business.

2. 2061 'C' # 3

How can firm speed up its cash collections and slow down its cash disbursements?

3. 2061 'F' # 3

What do you understand by float? Is it better to have positive or negative net float? Why?

4. 2063 Q.No. 8 a

What are the various types of working capital you may find in a manufacturing company? [5]

5. 2063 Q.No. 9 a

Briefly explain the motives for holding cash. [5]

6. 2065 Q.No. 9 a

What are the motives of holding cash? 5

Write Short Notes on

7. 2057 'F'/ 2058 'C'2059 'F' # 10 (a) /2064 Q.No. 10 b [BBS III Year]

Float.

8. 2056 'F' /2062 'F' Q. No. 10 (c) /2062 Q.No.10 (a)

Lock box system.

9. 2064 Q.No. 10 c

Functions of cash management [5]

10. 2064 C Q.No. 10 c

Increasing efficiency of cash management

11. 2065 Q.No. 10 c [BBS III Old]

Rationale for holding marketable securities

Numerical Problems

12. 2056 'C'

The Upper Bagmati Shoe Company is setting up a new checking account with Nepal Bank. The company plans to issue checks in the amount of Rs.1 million each day and to deduct them from its own records at the close of business on the day they are written. On average, the bank will receive and clear the checks at 5 P.M. the third day after they are written; for example, a check written on Monday will be cleared on Thursday afternoon. The company's agreement with the bank requires it to maintain a Rs.500,000 average compensating balance; this is Rs.250,000 greater than the cash balance the firm would otherwise have on deposit. It makes a Rs.500,000 deposit at the time it opens the account.

a. Assuming that the firm makes deposits at 4 P.M. each day (and the bank includes them in that day's transactions), how much must it deposit daily in order to maintain a sufficient balance once it reaches a steady state? Indicate the required deposit on Day 1, Day 2, Day 3, if any, and each day thereafter, assuming that the company will write checks for Rs. 1 million on Day 1 and each day thereafter.

b. How many days of float does company have?

c. What ending daily balance should the firm try to maintain (1) on the bank's records and (2) on its own records?

Ans: (a) Rs. 1,000,000 (b) 3 days (c) Rs. 500,000 and Rs. 25,00,000

13. 2057 'C'

Sagarmatha Corporation began operations 5 years ago as a small firm serving customers in Central Development Region. However, its reputation and market area grew quickly, so that today the firm has customers throughout the nation. Despite its broad customer base, the firm has maintained its headquarters in Kathmandu and keeps its central billing system there. The firm's management is considering an alternative collection procedure to reduce its mail time and processing float. On average, it takes 5 days from the time customers mail payments until the firm is able to receive, process, and deposit them. The firm would like to set up a lockbox collection system, which it estimates would reduce the time lag from customer mailing to deposit by 3 days-bringing it down to 2 days. The firm receives an average of Rs.1.4 million in payments per day. How many days of collection float now exists and what would it be under the lockbox system? What reduction in cash balances could the firm achieve by initiating in lockbox system?

Ans: 5 days; 2 days; Rs. 42,00,000

14. 2058 'F'

The Rapti Sugar Company is setting up a new checking account with Nepal Bank. The Rapti plans to issue checks in the amount of Rs.1.6 million each day and to deduct them from its own records at the close of business on the day they are written. On average, the bank will receive and clear (that is, deduct from the firm's bank balance) the checks at 5 P.M. the fourth day after they are written; for example, a check written on Monday will be cleared on Friday afternoon. The firm's agreement with the bank requires it to maintain a Rs.1.2 million average compensating balance, this is Rs.400,000 greater than the cash balance the firm would otherwise have on deposit. It makes a Rs.1.2 million deposit at the time it opens the account.

a. Assuming that the firm makes deposits at 4 P.M. each day (and the bank includes them in that day's transactions), how much must it deposit daily in order to maintain a sufficient balance once it reaches a steady state? Indicate the required deposit on Day 1, Day 2, Day 3, Day 4, if any, and each day thereafter, assuming that the company will write checks for Rs.1.6 million on Day 1 and each day thereafter.

b. How many days of float does firm carry?

c. What ending daily balance should the firm try to maintain (1) on the bank's records and (2) on its own records?

d. Explain how net float can help increase the value of the firm's common stock.

Ans: (a) Rs. 16,00,000 (b) 4 days (c) The firm

15. 2059 'C'

Bhadrapur Match Factory presently maintains a centralized billing system at its home office to handle average daily collections of Rs. 300,000. The total time for mailing, processing, and clearing is about 5 days.

a. If the opportunity cost on short-term funds is 12 percent, how much is the time lag of 5 days costing the firm?

b. If the firm designs a lockbox system with a regional bank that will reduce float by two and one-half days and will also reduce the annual expenses of the credit department by Rs. 30,000, what is the maximum acceptable compensating balance the firm should be willing to pay?

Ans: (a) Rs. 180,000 (b) Rs. 10,00,000

16. 2059 'F'

Each business day, on average, a company writes checks totaling Rs. 12,000 to pay its suppliers. The usual clearing time for these checks is five days. Meanwhile, the company is receiving payments from its customers each day, in the form of checks, totaling Rs. 15,000. The cash from the payments is available to the firm after three days. Calculate the company's disbursement float, collection float, and net float and also interpret the results.

Ans: Rs. 60,000; Rs. 45,000; Rs. 15,000

17. 2060 'C'

On a typical business day, a firm writes cheques totaling Rs. 1,000. These cheques clear in 10 days on average. Simultaneously, the firm receives Rs. 1,300. The cash is available in the five days on average. Calculate the disbursement float, the collection float, and the net float. How do you interpret the answer?

Ans: Rs. 10,000; Rs. 6,500; Rs. 3,500

18. 2060 'F'

Kathmandu Sugar Company is setting up a new checking account with Nepal Bank. The company plans to issue checks in the amount of Rs.1 million each day and to deduct them from its own records at the close of business on the day they are written. On average, the bank will receive and clear the checks at 5 P.M. the third day after they are written; for example, a check written on Monday will be cleared on Thursday afternoon. The company's agreement with the bank requires it to maintain a Rs.500,000 average compensating balance; this is Rs.250,000 greater than the cash balance the firm would otherwise have on deposit. It make a Rs.500,000 deposit at the time it opens the account.

a. Assuming that the firm makes deposits at 4 P.M. each day (and the bank includes them in that day's transactions), how much must it deposit daily in order to maintain a sufficient balance once it reaches a steady state? Indicate the required deposit on Day 1, Day 2, Day 3, if any, and each day thereafter, assuming that the company will write checks for Rs. 1 million on Day 1 and each day thereafter?

b. How many days of float does company have?

c. What ending daily balance should the firm try to maintain (1) on the bank's records and (2) on its own records?

Ans: (a) Rs. 100,000 (b) 3 days (c) Rs. 500,000 and Rs. 25,00,000

19. 2062 'C' Q. No. 7

The AVCO Company currently has central billing system. All customers make payments to the central billing location. It requires, on average, four days for customers mailed payments to reach the central location. And additional days and a half is required to process payments before a deposit can be made. The firm has daily average collection of Rs. 500,000. The company has recently investigated the possibility of initiating a lock box system. It has estimated that with such a system customer's mailed payments float would be reduced by 2 days. Further, processing time would be reduced by one and half day because each lock-box bank would pick up mailed deposits twice daily.

a. Determine the reduction in cash balance that can be achieved through use o a lock-box system.

b. Determine the annual opportunity cost of the present system, assuming 5% return on short-term instruments.

c. If the annual cost of the lock box system will be Rs. 75,000, should suck a system by initiated?

Ans: (a) Rs. 17,50,000 (b) Rs. 87,500 (c) The system should be initiated.

20. 2063 Q.No. 9 b

KK Inc. operates a mail order for doing business on the west region. KK receives an average of Rs. 500,000 in payments per day. On average it takes 4 days from the time customers mail checks until KK receives and processes them. KK is considering the use of a lockbox system to reduce collection and processing float. The system will cost Rs. 8,000 per month and will consist of 12 local depository banks and a concentration bank located in Kathmandu. Under this system, customers' checks should be received at the lockbox locations 1 day after they are mailed, and daily totals will be transferred to Kathmandu using wire transfer costing Rs. 50. Assume that KK has an opportunity cost of 12 percent and that there are 5 working days in a week and 52 weeks in a year.

i. What is the total annual cost of operating the lockbox system?

ii. What is the annual benefit of the lockbox system to KK?

iii. Should KK initiate the system? [5]

Ans: (i) Rs. 252,000 (ii) Rs. 180,000 (iii) Rs. 72,000

21. 2063 Q.No. 7 BBS III Old

The Everest Brewery field office of Dang of Everest Brewery Inc., has sold a quantity of can beer to Far Western marketing dealer in Far Western Region for Rs. 200,000. The dealer wants to transfer this amount to its concentration bank in Kathmandu as economically as possible. Two means of transfer are being considered: (a) A mail depository transfer check (DTC), which costs Rs. 2.5 and takes 3 days, or (c) a wire transfer, which costs Rs. 50 and for which funds are immediately available in Kathmandu.

i. Everest Brewery Inc., earns 6 percent annual interest on funds in its concentration bank. Which transfer method should Everest use to minimize the total cost of the transfer?

ii. At what rupee amounts would Everest be indifferent to the two transfer procedures?

iii. What other factors might influence the decision?

Ans: (i) Funds should be transferred through the WTC to minimize the cost DTC_{cost} = 102.50 & WTC_{Cost} = Rs. 50 (ii) Rs. 95,000 (iii) creditability, flexibility, reliability etc.

22. 2063 Q.No. 7 BBS III Partial

The Gorkha Company, which can earn 4 percent on money market instruments, currently has a lockbox arrangement with a Nepal Bank Ltd. for its western customers. The bank handles Rs. 3,000,000 a day in return for a compensating balance of Rs. 2,000,000.

a. The Gorkha Company has discovered that it could divide the western region into a mid western (with Rs. 2,000,000 a day collections, which could be handled by a Nabil Bank for Rs. 2,000,000 compensating balance) and far western regions (with Rs. 1,000,000 a day in collections, which could be handled by Nepal Bangladesh Bank by a Rs. 1,000,000 compensating balance). In each case, collections would be one-half day quicker than with the Nepal Bank arrangement. What would be the annual savings (or cost) of dividing the western region?

b. In an effort to retain the business. the Nepal Bank has offered to handle the collections strictly on a fee basis (no compensating balance). What would be the maximum fee the Nepal Bank could charge and still retain Gorkha's business?] [10]

Ans: (a) Rs. 20,000 (b)Rs. 60,000

23. 2064 C Q.No. 7

Koshi and Koshi Inc. (KK) operate a mail-order firm doing business on the West region KK receives an average of Rs. 500,000 in payments per day. On average it takes 4 days form the time customers mail checks until KK receives and processes them. KK is considering the use of a lockbox system to reduce collection and processing float. The system will cost Rs. 5,000 per month and will consist of 10 local depository banks and a concentration bank located in Kathmandu. Under this system, customers' checks should be received at the lockbox locations 1 day after they are mailed, and daily totals will be transferred to Kathmandu using wire transfers costing Rs. 40 each. Assume that KK has an opportunity cost of 12 percent and that there are 5 working days in a week and 52 weeks in a year.

a. What is the total annual cost of operating the lockbox system?

b. What is the annual benefit of the lockbox system to KK?

c. Should KK initiate the system?

Ans: (a) 164,000 (b) 180,000

24. 2065 Q.No. 8 [BBS III Old]

The Dynamic Company, which can earn 4 percent on money market instruments, currently has a lockbox, arrangement with a Rastriya Banijya Bank for its Western customers. The bank handles Rs. 3,000,000 a day in return for a compensating balance of Rs. 2,000,000.

a. The Dynamic Company has discovered that it could divide the western region into a mid western (with Rs. 2,000,000 a day collections, which could be handled by a NABIL Bank for Rs. 2,000,000 compensating balance) and far western regions (with Rs. 1,000,000 a days in collections, which could be handled by Nepal Bangladesh by a Rs. 1,000,000 compensating balance). In each case, collections would be one-half day quicker than with the Rastriya Banijya Bank arrangement. What would be the annual savings (or cost) of dividend the western region?

b. In an effort to retain the business, the Rastriya Banijya Bank has offered to handle the collections strictly on a fee basis (no compensating balance). What would be the maximum fee the Rastriya Banijya Bank could charge and still retain Dynamic's business? [10]

Ans: (a) Rs. 20,000 (b) Rs. 60,000

25. 2066 Q.No. 7 BBS III (Old)

Clear Glass Company has examined its cash management policy and found that, on average, 5 days are needed for cheques the company writes to reach its bank and thus be deducted from its checking account balance. On the other hand, an average of 4 days time Clear Glass receives payments from its customers until the funds are available for use at the bank. On an average day, Clear Glass writes cheques that are totalled Rs. 60,000 and it receives cheques from customers that totalled Rs. 70,000.

a. Compute the disbursement float, collection float, and net float in rupees.

b. If Clear Glass has an opportunity cost equal to 8 percent p.a., how much would it be willing to spend each year to reduce collection float by two days. [10]

Ans: (a) Rs. 300,000; Rs. 280,000; Rs. 20,000 (b) Rs. 11,200

12. RECEIVABLES MANAGEMENT

Theoretical Questions

1. 2056 'C'
What do you understand by the day's sales outstanding? Explain its importance in receivable management.

2. 2056 'F'
How do the day's sales outstanding help to monitor the receivable position?

3. 2057 'C'
Explain how would you analyze the changes in credit policy variables.

4. 2057 'F'
Describe the various elements of credit policy.

5. 2058 'C'
What are the benefits of computing day's sales outstanding?

6. 2058 'C'
How could a firm manage its receivable?

7. 2059 'C'
What do you understand by credit standards? If credit standards for the quality of accounts accepted are changed, what things are affected?

8. 2059 'F'
What do you understand by credit policy? What are the probable effects of a high percentage of bad debt loss but normal receivable turnover and credit rejection rate on sales and profits?

9. 2060 'C'
What do you understand by credit policy as an important ingredient of receivables management? Is an increase in collection period necessarily bad? Explain.

10. 2060 'F'
Explain the usefulness of preparing aging schedule of receivables?

11. 2061 'F'
What do you understand by credit policy? Identify and explain various terms of credit policy.

12. 2062 Q.No.2
How do the day's sales outstanding help to monitor the receivables position?

13. 2063 Q.No. 3
Discuss the elements of credit policy with suitable example. [10]

14. 2064 Q.No. 2
How do the day's sales outstanding help to control the receivables position? [10]

15. 2064 Q.No. 11 b
Explain the advantages and disadvantages of the short-term credit. [10]

16. 2065 Q.No. 11 [BBS III Old]
What are the four elements of a credit policy? To what extent can firm formulate their own credit policies as opposed having to accept policies that are affected by the competition? [20]

17. 2066 Q.No. 4
Briefly explain the elements of credit policy. [10]

18. 2066 Q.No. 11 BBS III (Old)
What does terms of credit mean? What are its determinants? How do credit terms relate to the firm's account receivable? [10]

Write Short Notes on

19. 2060 'F'
Day's sales outstanding

20. 2061 'C'/2062 Q.No.10 (c)

Credit standard

21. 2062 'C' Q. No. 10 (c) / 2065 Q.No. 10 c / 2066 Q.No. 10c

Aging schedule [5]

22. 2063 Q.No. 10 c BBS III Partial

Elements of credit policy [5]

Numerical Problems

23. 2057 'C'

Wonderland Industries sells on terms of 3/10, net 30. Total sales for the year are Rs. 900,000. Forty percent of the customers pay on the tenth day and take discounts; the other 60 percent pay, on average, 40 days after their purchases. The day's sales outstanding and average amount of receivable are respectively 28 days and Rs. 70,000. What would happen to average investment in receivables if Wonderland toughened upon its collection policy with the result that all non-discount customers paid on the 30th day?

Ans: Rs. 55,000

24. 2062 'F' Q. No. 7

McDowell Nepal sells on terms of 3/10,net 30. Total sales for the year are Rs. 900,000. Forty percent of the customers pay on the 10^{th} day and take discounts; other 60 percent pay, on average, 50 days after their purchases. Assume 360 days a year.

a. What is the days sales outstanding and their effects?

b. What is the average amount of receivable?

c. What would happen to average receivables if the company toughened up on its collection policy with the result that all non-discount customers paid on the 30^{th} day?

Ans: (a) DSO = 34 days (b) Rs. 85,000 (c) 22 days, Rs. 55,000

13. INVENTORY MANAGEMENT

Theoretical Questions

1. 2060 'C'

What do you understand by inventory management? How do you exercise control over inventories?

2. 2060 'F'

How should a firm manage its inventories?

3. 2061 'C'

What do you understand by inventory management? Explain how do you manage and control inventories in a business enterprise.

4. 2065 Q.No. 8 a

Briefly explain the motives for holding inventories. 5

5. 2066 Q.No. 11

What do you understand inventory management? Discuss the determinants of inventories and its relationship to inventory control systems. [20]

Write Short Notes on

6. 2056 'C'/ 2059 'C'

Economic order quantity.

7. 2059 'F'

Inventory control.

8. 2061 'F'

Reorder point.

9. 2063 Q.No. 10 c / 2065 Q.No. 10 a [BBS III Old]

Inventory control system [5]

Numerical Problems

10. 2056 'F'

The Homemade Bread Company buys and then sells (as bread) 2.6 million bushels of wheat annually. The wheat must be purchased in multiples of 2,000 bushels. Ordering costs, which includes grain elevator removal charges of Rs. 3,500, are Rs. 5,000 per order. Annual carrying costs are 2 percent of the purchase price of Rs.5 per bushel. The company maintains a safety stock of 200,000 bushels. The delivery time is 6 weeks.

a. What is the economic order quantity?

b. At what inventory level should an order is placed to prevent having to draw on the safety stock?

Ans: (a) 509,902 ≈ 510,000 bushels (b) 500,000 bushels

11. 2057 'C'

A certain company sells 240,000 bags of lawn fertilizer annually, the optimal safety stock (which is on hand initially) is 1,200 bags. Each bag costs Rs.4, inventory carrying costs are 20 percent, and the cost of placing an order with its supplier is Rs.25.

a. What is the economic ordering quantity?

b. What is the maximum inventory of fertilizer?

Ans: (a) 3,873 bags (b) 5,073 bags

12. 2057 'F'

The Homemade Bread Company buys and then sells (as bread) 2.6 million bushels of wheat annually. The wheat must be purchased in multiples of 2,000 bushels. Ordering costs, which includes grain elevator removal charges of Rs. 3,500, are Rs. 5,000 per order. Annual carrying costs are 2 percent of the purchase price of Rs.5 per bushel. The company maintains a safety stock of 200,000 bushels. The delivery time is 6 weeks.

a. What are the total inventory costs, including the costs of carrying the safety stock?

b. At what inventory level should a reorder be placed to prevent having to draw on the safety stock?

Ans: (a) Rs. 70,990.20 (b) 500,000 bushels, 10.20 weeks

13. 2058 'C'

Lumbini Trading Company is a distributor of air filters to retail stores. It buys its filters from several manufacturers. Filters are ordered in lot sizes of 1,000, and each order costs Rs.40 to place. Demand from retail stores is 20,000 filters per month, and carrying cost is Rs.0.10 a filter per month.

a) What is the optimal order quantity with respect to so many lot sizes? (that is, what multiple of 1,000 units should be ordered)?

b) What would be the optimal order quantity if the carrying cost were cut in half to Rs.0.05 a filter per month?

c) What would be the optimal order quantity if ordering costs were reduced to Rs.10 per order?

d) Explain how optimal order quantity varies with monthly requirement, ordering costs and carrying costs.

Ans: (a) 4,000 filter or 4 lots (b) 6,000 filter or 6 lots (c) 2,000 filter or 2 lots

14. 2058 'F'

Computer Supply Company must order floppy diskettes from its supplier in lots of one dozen boxes. Given the following information, complete the table below and determine the economic ordering quantity of floppy diskettes for the company.

Annual demand: 2,600 dozen
Cost per order placed: Rs.7.00
Carrying cost: 15%
Price per dozen: Rs.20

Order size (dozens)	26	50	100	130	200	2,600
Number of orders						
Average inventory						
Carrying cost						
Order cost						
Total cost						

Ans: EOQ = 100 dozens

Order size (dozens)	26	50	100	130	200	2,600
Number of orders	100	52	26	20	13	1
Average inventory	13	25	50	65	100	1,300
Carrying cost (Rs.)	39	75	150	195	300	3,900
Order cost (Rs.)	700	364	182	140	91	7
Total cost (Rs.)	739	439	332	335	391	3,907

15. 2060 'F'

A college bookstore is attempting to determine the optimal order quantity for a popular book on finance. The store sells 5,000 copies of this book a year at a retail price of Rs.12.50, and the cost to the store is 20 percent less, which represents the discount from the publisher. The store figures that it costs Rs.1 per year to carry a book in inventory and Rs. 100 to prepare an order for new books.

1) Determine the total inventory costs associated with ordering 1,2,5,10, and 20 times a year.
2) Give reasons for the behavior of total inventory costs calculated in part (1) above.
3) Determine the economic order quantity.

Ans: (1) Rs.2,600; Rs. 1,450; Rs. 1,000 Rs. 1,250 Rs. 2,125 (2) Initially the total cost is going to decrease up to certain order size then after it is going to increase because of inverse relationship between ordering cost and carrying cost (3) 1,000 books

16. 2062 'C' Q. No. 6

The Kailali Floor Mills produces only one product: flour packed in bags of 20 kg each. The single raw material used in producing flour is wheat. For each 20 kg bag produced, 12 kg of wheat are required. Assume that the company manufactures 150,000 bags per year, that demand for wheat is perfectly steady throughout the year that it costs Rs. 200 each time wheat is ordered, and that carrying costs are Rs. 8 per kg per year. Delivery time required is 4 days. Assume mills operate 300 days a year.

a. Determine the economic order quantity of wheat and why it is important?
b. What are the total inventory costs for the company?
c. What is the reorder level of wheat in kg and show their effects.

Ans: (a) EOQ = 9,487 kg (b) Total Cost = Rs. 75,895 (c) ROL =5,026 kg

17. 2062 'F' Q. No. 6

The Homemade Bread Company buys and then sells (as bread) 2.6 million bushels of wheat annually. The wheat must be purchased in multiples of 2000 bushels. Ordering costs, which include grain elevator removal charges of Rs. 3,500 are Rs. 5,000 per order. Annual carrying costs are 3 percent of the purchase price of Rs. 50 per bushel. The company maintains a safety stock of 200,000 bushels. The delivery time is 6 weeks. Assume 52 weeks a year.

a. What is the EOQ and show their effects?
b. What are the total inventory costs?
c. At what inventory level should a reorder be placed to prevent the use of safety stock?

Ans: (a) EOQ = 131,656.11,000, (b) Rs. 497,484.85 (c) 104,000

18. 2062 Q.No.8

The Home-made Bread Company buys and then sells (as bread) 2.6 million bushels of wheat annually. The wheat must be purchased in multiples of 2,000 bushels. Ordering costs, which include grain elevator removal charges of Rs. 3,500 are Rs. 5,000 per order. Annual carrying costs are 2 percent of the purchase price of Rs.5 per bushel. The company maintains a safety stock of 200,000 bushels. The delivery time is 6 weeks.

a. What is the EOQ?
b. At what inventory level should an order be placed to prevent having to draw on the safety stock?
c. What are the total inventory costs, including the costs of carrying the safety stock?
d. The wheat processor agrees to pay the elevator removal charges if Home-made Bread will purchase wheat in quantities of 650,000 bushels. Would it be to Home-made Bread's advantage to order this alternative quantity?

Ans: (a) 509,902 ≈ 510,000 bushels (b) 500,000 bushels (c) Rs. 70,990.20 (d) 58,500

19. 2063 Q.No. 8 BBS III Old

Greenland Fertilizer Centre sells 300,000 bags of Greenland fertilizer annually through total demand may be equal to 350,000 bags. The optimal safety stock (which is on hand initially) is

1500 bags. Each bag costs centre Rs. 5, inventory-carrying costs are 20 percent, and the cost of placing order with its suppliers is Rs. 30

a. What is the economic order quantity?
b. What is the maximum inventory of fertilizer?
c. What will centre's average inventory be?
d. How often must the centre order?
e. If lead-time is approximately 20 days, at what inventory level an order be made? Assume 360 days in a year.

Ans: (a) 4,243 bags (b) 5,743 bags (c) 3,621.5 bags (d) 5.09 days (e) 5,437.67 bags

20. 2063 Q.No. 8 BBS III Partial

Lawn Fertilizer Centre sells 240,000 bags of lawn fertilizer annually. The optimal safety stock (Which is on hand initially) is 1200 bags. Each bag costs Centre Rs. 4, inventory -carrying costs are 20 percent, and the cost of placing order with its suppliers is Rs. 25.

a. What is the economic order quantity?
b. What is the maximum inventory of fertilizer?
c. What will Centre's average inventory be?
d. How often must the Centre order?
e. If lead-time is approximately 12 days, at what inventory level an order be made? Assume 300 days in a year. [10]

Ans: (a) 3,873 bags (b) 5,073 bags (c) 3,137 bags (d) 5 days (approx) (e) 1,454 bags

21. 2064 Q.No. 6 [BBS III Year]

Cheap lawn fertilizer shop sells 300,000 bags of lawn fertilizer annually. The optimal safety stock (which is on hand initially) is 1000 bags. Each bag costs centres Rs. 4, inventory-carrying costs are 25 percent, and the cost of placing order with its suppliers is Rs. 25.

a. What is the economic order quantity?
b. What will Centre's average inventory be?
c. How often must the Centre order (approximate days)?
d. If lead-time is approximately 10 days, at what inventory level an order be made? Assume 360 days in a year. [10]

Ans: (a) 3,873 bags (b) 2,936.50 bags (c) 4.65 days (d) 1,587.33 bags

22. 2064 C Q.No. 8

Cheap lawn fertilizer shop sells 30,000 bags of lawn fertilizer annually. The optimal safety stock (which is on hand initially) is 1000 bags. Each bag costs centre Rs. 4, inventory-carrying costs are 25 percent, and the cost of placing order with its suppliers is Rs. 25.

a. What is the economic order quantity?
b. What will centre's average inventory be?
c. How often must the Centre order (approximate days)?
d. If lead-time is approximately 10 days, at what inventory level an order be made? Assume 360 days in a year.
e. If supplier offered a quantity discount of Rs. 0.05 per bag if order size is 20,000, should supplier's offer be accepted?

Ans: (a) 1,225 bags (b) 1,613 bags (c) 15 days (approx) (d) 1,833 bags

23. 2065 Q.No. 9 b

Chemical Fertilizer Centre sells 240,000 bags of lawn fertilizer annually. The optimal safety stock (Which is on hand initially) is 1500 bags. Each bag costs centre Rs. 8, inventory-carrying costs are 20 percent, and the cost of placing order with its suppliers is Rs. 25.

i. What is the economic order quantity?
ii. What is the maximum inventory of fertilizer?
iii. What is Centre's average inventory? → $EOQ/2$ + Safety stock
iv. How often must the Centre order? → $\frac{\text{weeks}}{\text{No. of order}}$
v. If lead-time is approximately 6 days, at what inventory level on order be made? Assume 360 days in a year. 5

Ans: (i) 2,739 bags (ii) 4,239 bags (iii) 2,869.5 bags (iv) 4 days (v) 2,761 bags

24. 2066 Q.No. 8 BBS III (Old)

Garden Fertilizer Centre sells 2,000 bags of garden fertilizer monthly. The optimal safety stock (which is on hand initially) is 1,200 bags. Each bag costs centre Rs. 4, inventory-carrying costs are 20 percent, and the cost of placing order with its suppliers is Rs. 25.

a. What is the economic order quantity?

b. What is the total annual cost of holding inventory?

c. If lead-time is approximately 12 days, at what inventory level an order is made? Assume 360 days in a year. [10]

Ans: (a) 1,224.74 (b) Rs. 979.80 (c) 400 units

14. DIVIDEND POLICY

Theoretical Questions

1. 2062 Q.No.3

What are the factors of influencing dividend policy? 10

2. 2064 Q.No. 3

What is the procedure of dividend payment? Explain. 10

Write Short Notes on

3. 2065 Q.No. 10 a

Types of dividend payout scheme 5

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